

CONTROLLING THE CLOTHING FIRE PROBLEM*

OBSERVATIONS ON THE BRITISH EXPERIENCE

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THIS report will be based upon correspondence from official and nonofficial sources in Britain; conversations with Dr. C. A. Boucher of the British Ministry of Health; review of selected papers from British medical and industrial sources, and observations I made while in London and Birmingham in September, 1966.

Many of you here may be familiar with the British problem of clothing fire burns and efforts toward their control. Those who are not may be interested in a brief description of the factors leading to joint action by government and industry, and the present status of implementation.

CLOTHING FIRE BURN PROBLEM IN BRITAIN

Deaths from clothing burns in homes and residential institutions in England and Wales ranged from a high of 329 to a low of 234 during the five years 1958 to 1962.¹ In 1964, there were 277 such deaths. The rate for females is about 4½ times the rate for males, for all ages. The highest number of deaths and the highest rate is in the elderly, particularly those 75 and over. The next highest rate is in children under 5 years of age.

Children's nightdresses and open fires have been identified as specific objects of concern by the Home Office, which has general responsibility for the safety of the home. Other organizations actively interested or involved include the Ministry of Health, the Royal Society for Pre-

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vention of Accidents, the Medical Research Council, the Textile Institute, the Furnishing Fabric Manufacturers' Association, and the Retail Trading-Standards Association.

The Industrial Injuries and Burns Research Unit at the Birmingham Accident Hospital has been responsible for making available extensive data on burn injuries. Dr. John P. Bull, director of the Unit, and his predecessor, Dr. Leonard Colebrook, have made important contributions not only in the field of burn treatment, but also in studies of the social, medical, and environmental factors related to this form of injury.

Dr. Bull has reported² that accidents in which clothes catch fire are the main cause (90 per cent) of fatal domestic burns. They account for just over one half of all inpatient admissions to the Birmingham Burns Unit. The total case mortality for clothing burns is about 23 per cent, as compared to 3 per cent for other burns. For the elderly, the mortality rate is 73 per cent.

PREVENTIVE MEASURES

The British have developed three basic categories of preventive measures: 1) education (or propaganda as they describe it), 2) better guarding of open fires, and 3) the provision of flame-resistant clothing. In the latter two categories, the government, after consultation with trade associations, has taken direct but incomplete regulatory action under authority of the Consumer Protection Act of 1961. An earlier attempt at regulation by police power is reported to have been largely unknown by the public. The Children's and Young Persons Act made it an offense to leave a child up to 12 with an unguarded coal fire. The penalties were rarely invoked. Punitive measures against parents after death or serious injury of a child were ineffective.

REGULATIONS AND STANDARDS

The Consumer Protection Act of 1961 authorizes the Secretary of State to impose by regulation, on any prescribed class of goods, safety requirements that in his opinion are expedient to prevent or reduce risk of death or personal injury. In addition, he is authorized to prescribe the marking of goods with such warnings or safety instructions as he deems appropriate.

Previously a 1952 Heating Appliances Act required gas, electric, and oil-burning radiant heaters to be sold with protective guards. Brit-

ish standards for guards to cover coal fires were adopted in 1956. Dr. Bull reports that many families who most need them do not obtain effective guards. The difficulties range from cost considerations to lack of knowledge and lack of availability in retail outlets.

Early in 1964 the Home Office began consultations with consumers' safety organizations and trade associations about the possibility of regulating the flammability of children's nightwear. As a result, regulations regarding children's nightdresses were developed and came into operation in October 1964.

EFFECTIVENESS OF LEGISLATION

Dr. Boucher evaluated effectiveness of the legislation in causing a reduction in burn morbidity in these words:

It is probably too early to draw any conclusions, since the Children's Nightdresses Regulations only came into operation on 1st October 1964. Nevertheless, if two six month periods 1) October 1963 to March 1964 and 2) October 1964 to March 1965 are studied from the point of view of fatal clothing burns from nightwear in children under the age of fifteen, during the first period 10 girls died and, during the second period, only 4.

Dr. Bull, during our visit to his research unit in Birmingham, said it was his impression that the regulations on nightdresses were having a beneficial effect among infants. There have been no admissions for nightdress fires that have involved treated materials or flame-retardant synthetics. He emphasized that this was only an impression—that there were insufficient experience and data from which to determine a trend. Other variable factors, such as an increase in central heating installations in new homes might affect the rate of exposure. He also pointed out that the regulations covered finished garments; that many mothers made childrens' nightclothes at home, from yard goods that might or might not meet the standard for low flammability.

POSSIBLE EXPANSION OF THE REGULATIONS

Industry has expressed concern over the inadequacy of the regulations on nightdresses and of the testing standards. The Textile Institute points out that a fabric may have passed the test, but that the finished garment may have characteristics that would allow it to ignite and burn at a rate hazardous to a child.³ Dr. A. R. Urquhart comments: "The

more one knows about the subject the less happy one is likely to be about the present criteria for safety, for the existing standard of flame resistance was originally developed for nonthermoplastic fabrics, and is not satisfactory for synthetics. Medical and safety people are concerned because the regulation covers only part of the total hazard from clothing ignition, and completely misses the highest risk group—the elderly.”⁴

Plans are now well advanced toward revisions that might expand the 1964 regulation. Dr. Boucher reports:

A Working Party on Flammable Clothing was set up by the Home Secretary in May 1965 to consider the possibility of extending the scope of the Children's Nightdresses Regulations 1964; other kinds of children's clothing, old persons' nightwear and material sold in the piece were particularly in mind. The Working Party considers that the present requirements in the regulations relating to threads should be amended and the present exception in favour of infants' gowns should be limited to gowns having a specified chest measurement so that infants would not be able to wear such gowns from the age of about six months, when most children become mobile. The actual measurement has not yet been decided. The Working Party has also noted the high incidence of clothing burns involving the elderly and is considering the desirability of promoting regulations for safer clothing both for the elderly and the disabled.

MY OWN OBSERVATIONS

It is dangerous to draw conclusions from very limited direct observation. My comments should be considered with that constraint in mind. It is my impression that the British have been progressive in government-industry cooperation in attacking the problem of regulation. It also appears from the literature that textile and retail groups have been imaginative in marketing techniques designed to make the customer aware of the importance of flame-retardant garments and in producing attractive types of garments beyond the scope of the regulation. A spot check of three representative department stores indicated that there is general compliance with the nightdresses regulations. Display stocks of apparel covered by the requirements were clearly identified as flame-retardant.

A senior buyer for one of the leading retail chains was quite frank in his appraisal of the current situation. Competition and the absence

of a strong demand on the part of customers create a problem for even the highly motivated merchandiser who might like to promote the sale of low-flammability dresses, robes and other kinds of garments not subject to the 1964 regulations. Despite this, responsible retailers are experimenting with marketing new products, and making efforts toward consumer education.

In summary, it can be said the British have recognized that the combination of flammable clothing and unprotected heating appliances in so many homes has created a critical medical and an economic problem. The government has undertaken an admittedly limited approach to the control of that problem. They recognize the limitations, and are proceeding with some deliberation toward expanded regulations. The Home Office has involved affected trade groups in the process. The forthcoming expanded requirements are bound to reflect the collective knowledge and experience of these groups. An unanswered question is whether legal controls can be developed that will effectively protect all age groups, or whether a combination of consumer demand and the availability of a widespread, competitively priced product might accomplish the same result.

REFERENCES

1. Bull, J. P., Jackson, D. M., and Walton, C. Causes and prevention of domestic burning accidents, *Brit. Med. J.* 2:1421-27, 1964.
2. *Ibid.*
3. Jones, E. B. *The Flammability of Clothing Fabrics*. Manchester, Textile Inst. and Industry, 1965.
4. Urquhart, A. R. *Performance Priorities of Textiles for Garment Manufacture*. Manchester, Textile Inst. and Industry, 1965.